

HENRI GEORGES FOURCADE, D.Sc., F.R.S. (S. Afr.)

Henri Georges Fourcade came to South Africa from France, as a lad of sixteen or seventeen, probably early in 1881. The first official mention we have of him is by the Superintendent of Woods and Forests for the Cape of Good Hope at Knysna in 1882—"I have found another valuable assistant in Mr. Fourcade, who, after the theoretical examination for Land Surveying in this Colony, spent several months studying Forestry, and preparing maps in my office. While there he had charge of my Forest Herbarium and collected seeds, etc. of indigenous trees. With the help of two auxiliaries, thus prepared, the Conservator at Knysna has been able to begin the division of his Forest into series and into sections."

The Superintendent was the Count de Vasselot de Regnier of the French Forest Department, recently appointed for a given period, when Parliament had been aroused at last to give its gravest consideration to the perilous state of affairs in the valuable Cape forests, where thriftless and unsystematic working had resulted in the complete destruction of many forests and the grievous impoverishment of many more. Captain Harrison was the Conservator and Messrs. Rawbone and Fourcade the "two auxiliaries" or District Forest Officers—"my able and most willing assistants".

One pictures the young Fourcade "with new-fledged hope still fluttering in his breast" (to quote Wordsworth, in later years his favourite English poet), fortified by the excellent training received from so eminent a specialist as the Count, and delighted at playing such an important part in the newly organized scheme of management. Moreover, he had all the excitement and fun-of-the-fair, ordered exactly to his liking, with ample scope for his outstanding ability, and a salary of £200—£300 a year, which was no mean one for that time. The old families of those parts soon welcomed "the brilliant young Frenchman" to their homes and genial social entertainments, and life-long friendships were

begun. One of the stories told of him in those early days describes how he arrived one night desperately late for the meal and weary with walking because, as he told his anxious host (with more of logic than idiom) "the horses knocked down". It was in much happier circumstances, however, that, bowing low to the appropriate guest, he offered—"a pair of pears for a peerless lady".

In 1885 the Conservator of Forests, Midland Conservancy, appended to his report a report by Fourcade himself, describing his work as—the supervision of timber sales, the regulation of yield, and the surveying of forests in the West Knysna district. He also listed the names of 75 collections of indigenous trees he had made for the forest department's herbarium, and later he was specially commended by the Conservator for his good work.

In 1888—1890 Fourcade was—"at the instance of the Natal Government detached to report on the forests of Natal and submitted a most comprehensive report with valuable recommendations and much original matter on Cape timbers not available elsewhere." (Sim—"Forest Flora".)

From 1891—1899 he was employed specially on the demarcation of forests, his duties being those of a surveyor, and in 1901 he is mentioned as having prospected two alternative road-routes from the harbour at Storms River Mouth to Assegaaibosch. After this he seems to have passed entirely into the Surveyor-General's Department. His colleagues and contemporaries were convinced that as far as experience and ability were concerned he was pre-eminently the right man for the post of Surveyor-General; but they feared he had not always been as discreet as becomes a civil servant, and that his disputative logicity would prevent his appointment. (One story they tell is of a dispute with his chief carried on by letter. When the latter considered it had gone on long enough, Fourcade was bidden to "stop wasting government stationery." He obeyed, and continued the correspondence on his own stationery!). When the post fell vacant he was passed over. There is no doubt he was bitterly disappointed and felt the Government had not treated him fairly. But with innate fortitude and resourcefulness he said goodbye to all that in 1913, retired from the Civil Service, sold his surveyor's instruments, opened a general dealer's store, set up a sawmill, and proceeded as a registered "bush worker" to work the timber on his own property at Witte Els Bosch, which became his home for the rest of his life. Four years later he told Sir Alec Carlson he had made "a lot of money". Later in one of his letters to me he wrote—"I am leaving tomorrow for a wooded mountain farm I have in Long Kloof whereon I must lay out roads and a tramway track for working the timber. This is rather a big job which will leave me no leisure for plant-determinations.

But I shall have fine opportunities for collecting and will send you a parcel or two direct if I may."

It must have been from these enterprises that the large sum (£78,000) bequeathed to the University of Cape Town was derived in the first instance. For Fourcade apparently became a sound business-man and made wise investments, so that his failure to secure the coveted post in the Civil Service became the University's immense gain, and inevitably one recalls Milton's fine lines:—

"All is best, though we oft doubt
What the unsearchable dispose
Of highest wisdom brings about,
And ever best found at the close."

With the advent of aeroplanes Fourcade realized the important part to be played by aerial photographic surveying and began working out the problems involved therein. His first paper—"On a Stereoscopic Method of Photographic Surveying" was read before the S.A. Philosophical Society in 1901. Other papers followed on the same subject and on the instruments to be used, his greatest achievement in this latter direction being the construction of an apparatus to translate aerial photographs into plans having the right projection. He was asked how he had succeeded where so many had failed and replied, "There were three dimensions to be considered. Others tried to solve the problem one dimension at a time whereas I tackled all three dimensions at once." The patent rights of this instrument were acquired by the British Government and it was said to have been "widely used in the survey of Burma and other heavily wooded territories of the Empire."

Fourcade found the War Office "the most difficult of all buildings to enter, but once your credentials were approved and you were known you could come and go at will, seeing many world-famous men and brushing shoulders with them in the corridors." He must have thoroughly enjoyed this contact with intelligences equal or superior to his own; for here we could only admire him from a distance as "being a very learned man whose writings were quite beyond us."

Indeed, there seems little hope of any one mind being able to grapple with the many dimensions of this remarkable and versatile man's range "all at once", as he had "tackled the three dimensions" in the construction of his famous instrument. It was easy enough for Charles Lamb, in his inimitable manner, to distinguish his "works" (the numerous ledgers he had filled during his 35 years in the service of the East India Company) from his "recreations" (the immortal "Essays" and other literary productions); but in Fourcade's case the "works" often became "recreations", and these with his hobbies would develop into works.

For his was always the unhurried and brooding way that would avoid surfaces and penetrate the depths, ever conscious of the more that was still to be known. It was for his outstanding work as a mathematician and surveyor and for his contribution to South African botany that he was made a Fellow of the Royal Society of South Africa in 1927, and that he received the honorary degree of Doctor of Science from the University of Cape Town in 1930.

Much of this work involved long periods of hermit seclusion in lonely places which provided ideal conditions for the prosecution of his many other mental activities. But in 1920–1921 there came a change and the “recluse” returned to civilisation. After a lapse of ten years he called on some very old friends “for a few minutes”. These were lengthened to several days, with delightful expeditions in his car to introduce other visitors in the house to some of the beautiful scenery he knew. This was after his decision to join in the Botanical Survey of the south-eastern Cape Province and to concentrate on a “Check List of the Flowering Plants of the Divisions of George, Knysna, Humansdorp and Uniondale.” He had begun this actually on his own account much earlier, the first collection recorded in his botanical register being dated July 1905, and he wrote to me in 1921—“At first I limited my collecting to the Zitzikama, bounded by the Keurboom and Krom Rivers, but later agreed to include any plants I might be able to collect in the districts of George, Knysna, Uniondale and Humansdorp, this being the area Dr. Schonland mapped out for the next regional list of the Botanical Survey.”

This large area of 5,429 sq. miles, with most of which he was already so familiar from another angle, was now to be explored in the minutest detail and under very different conditions. The car simplified operations considerably, and it was a joy to be following in the tracks of the early travellers and indulging in the fancy that he might be collecting from the same old tree as, say, Burchell had done more than a hundred years before. Certainly the collecting was the most congenial part of the task he had undertaken, especially when all went well, as in October 1921—“I had a very pleasant trip round by Knysna and George with fine weather, a car that ran without a hitch, and the hospitality of old friends.” But in December 1927 things went ill—“I set out early this month on a collecting tour, but ‘the best laid plans . . .’ and on the second day I was pulled up by finding something wrong with one of my eyes. Being near Humansdorp at the time, I consulted a local doctor who despatched me to a specialist in Port Elizabeth who found an effusion into the vitreous and told me to go home at once and remain in a dark room for at least a week if I did not want to lose the sight of that eye. I have now remained in a dark room for over a fortnight. The condition

of the eye is improving and there is every prospect of recovery. But I shall have to use my eyes as little as possible for the next few months and will be unable to continue attempting determinations, so that, if I may, I shall have to send you a larger proportion than formerly of the plants I come across . . . I am tired of inaction and propose to resume my ramble tomorrow. I hope that, taking due care of my eyes, it will not be cut short again."

There was bad luck again in October 1932—"My recent tour was rather unfortunate. It began raining on the second day, and off and on there fell up to 20 inches in some parts before I returned home. What with flooded rivers, impassable roads and bad weather, I found it impossible to carry out my original programme, and, to crown it all, when half through I sustained severe internal haemorrhage which alarmed the doctor at Knysna, where I was rushed into, but I recovered more quickly than he had thought possible and after a week he allowed me to go home by easy stages, with strict injunctions not to exert myself, which has put a damper on my plans for collecting this season, after having lost three through being in England . . . Anyhow the tour seems to show that I am far from having reached finality. I found over 100 species which I had not collected before and a considerable number of these appear to be new."

In January 1933—"I recently ran up to Olifants River Warm Baths in the Kamanassie Karroo with the idea of finding Thunberg's *Mesemb. truncatum* which he collected there in January or February, but although for two or three days a boy and I went over the ground with the fine-tooth comb (or is it fine tooth-comb?) which journalists carry when they explore avenues and leave no stone unturned, I saw nothing resembling the Kew drawing of Thunberg's type." Then after setting out "to collect vigorously" he was disappointed to find that "veld burning, increase of grazing, the spread in some areas of pests like *Rhenoster* and Prickly Pear, and the operations of the Forest Department in others have combined to reduce enormously the occasion of the more uncommon species, even during the limited period I have known these districts. Last month (November) I went down the Montagu Pass, once upon a time described as a "botanical paradise" but now burnt bare year after year by the Railway people, and spent a whole day searching its slopes with the help of a boy, without finding a single plant to collect, although I have not yet collected perhaps half the number of species which have been recorded from the Pass." Strenuous, however, and disappointing as the collecting often was, and tedious the drying and ticketing of specimens for his own herbarium and of many more for distribution to other herbaria, Fourcade was faced with far more formidable obstacles (greater

then than they would be now) in connection with identifications. These involved the careful verification or correction of existing identifications as well as the naming of his own collections—all increased by the inaccessibility of literature and of the old types overseas. Then there were disheartening delays in getting the descriptions of his new species published, surely a combination of hindrances that might have proved insurmountable to a less patient and determined worker.

Naturally we were all prepared to help as far as we possibly could, knowing how essential and fundamental was the information supplied in this Check-List for all "future work on the veld-management of these parts"; but our help was quite insignificant, and he had to struggle with nearly all the problems himself to their bitter end. In July 1934 he seemed to be bracing himself up for the final attack—"Having reached man's allotted span of three score years and ten, I feel that it is high time that I should complete various bits of work I have been engaged upon, and one of them is a list of plants of my region on account of which I have already paid three lengthy visits to Kew and propose paying a fourth early next year. . . . If you can help further by contributing descriptions there should be no difficulty in arranging for their publication by the Royal Society of South Africa, as I am quite willing to bear the cost. In fact I have been so impressed by the financial obstacles to the publication of scientific work in this country that I have decided to leave a substantial share of my pennies to establish a fund for subsidizing the publication of suitable work by the Royal Society of S.A. and the Bolus Herbarium." Earlier (June 1933)—"The continued withholding of the publication of certain of your species in the Kew Bulletin, is unpleasant. On September 15th when I took the descriptions to Sir Arthur Hill he professed that he would have much pleasure in finding room for them in the Bulletin, and during the whole of my stay in England he was very civil to me, so that I do not think that the obstruction, if any, comes from him. The prospect of publication seems as remote now as it was in 1931. If time allows, one course—not very satisfactory—would be to ask Sir Arthur Hill to kindly return the descriptions in order to take advantage of the opportunity of including them in your forthcoming papers. If too late, the only thing to do is to go on waiting—equally unsatisfactory."

During his visits to the Bolus Herbarium we found Dr. Fourcade the ideal student, handling plants and books with the greatest care and showing every consideration for the other workers—a shining example to the rest of us. We were all impressed with his utter sincerity and selflessness. He dreaded giving unnecessary trouble and one was often touched by his courtesy and humility—"I hope you will kindly allow

me to work at the Bolus Herbarium. . . . I shall realize how busy you are and will not disturb you lightly." ("and will not disturb you lightly"—surely this is like something "the angel of hearing loves to caress and murmur over and over again.") Much later, in his eightieth year, he was distressed on our account—"Very many thanks for the determination of the plants I sent you last. I find, to my dismay, that I had good matches for four of them, the identifications of which I should not have troubled you about. This reveals the mental inertness I have been in and I must apologize for the unnecessary work given to your busy staff. I shall now be on my guard against my limitations and try to be more careful in future. Many thanks again."

Every service, too, would be acknowledged in generous terms—"I must thank you very much for supplying the names of the heaths submitted to you. I think it is quite a feat to have determined them all when so many were in such a poor condition." And he would mention, if it were a joint report, each contributor by name—"I am much obliged, too, to Miss Barker, Miss Leighton, Miss Lewis and Mr. Pillans for their shares in the work." Nor would he lose a chance of slipping some additional praise in edgeways—"I compared several hundreds of my specimens at Kew and was able to add largely to their correct naming. Very few of those which had been named at the Bolus Herbarium were found to disagree." And again in acknowledging a presentation—"The book will always remind me of the pleasant and instructive days I spent in the Bolus Herbarium and of the generous assistance I met from all whenever I was in a difficulty." Yet all the time his valuable contributions of plants to the Herbarium were an ample recompense for what we did, and his gratitude was just the genuine appreciation of a worker for the work of others.

The Check List was completed for publication at the end of 1939 and appeared as Memoir No. 20 of the Botanical Survey of South Africa in 1941. Nearly 3,000 native species are recorded, sixteen of which bear his name, and 166 aliens. But supplementary collecting still went on, in spite of failing health. There were "sessions" in the nursing-home and during one of these (May 1943) Dr. Fourcade wrote—"I cannot exactly say that I am better, I have to continue experimental treatment and to rest as much as possible and do very little for months yet before I can hope to be tolerably well again . . . and there are no prospects of my doing much botanical work in the near future. I still glean, however, alongside roads I have to travel."

There was a triumphant letter later when he and Miss Esterhuysen had joined forces—"About 220 species not represented in my herbarium have been added to it since October 1941. Of these Miss Esterhuysen

contributed about 73, named and unnamed, and myself about 93, but I spread over 14 months what she did in a month, and her collections are more valuable than mine because they include more new species or more new additions to my list. Several hundred specimens have also been mounted which I had already, but only from other districts of my region."

During the war he was greatly distressed by the turn of events in France and refrained from discussing "the hopeless situation."—"I am much obliged to you," he wrote "for sending me Dr. Leipoldt's fine sonnet on France which I have read with great appreciation. My hope and trust are that he may prove to have been a true prophet."

Among his later publications was an important one in "The Transactions of the Royal Society" (read in June 1941) entitled—"Some Notes on the Effects on the Incidence of Rainfall over the Surface of Uneven Ground." The special rain-gauge he invented is now used in Jonkershoek.

Another excellent paper, published in "The Journal of South African Botany" and dated April 1944, takes us back once more to his own familiar area. These "Notes on Burchell's Catalogus Geographicus, *Middle Portion*," accompanied by photographs and accurate maps, are most instructive and valuable in fixing the exact localities in a modern map of Burchell's famous collections in those parts.

As far as space would permit I have quoted extracts from Dr. Fourcade's letters to me (over a period of some 26 years), as showing what manner of man he was. For the last thing he ever wanted to do was to talk of himself and his "own mysterious and many-flowered altars," and this reticence in one of so sensitive a nature may have been often misunderstood. Most of his friends, for instance, were unaware of his love for poetry, and that he could be surprised even into quoting Wordsworth and Walt Whitman on rare occasions. Writing of a friend who had passed on, he said—"My memory of him shall live as that of a kind and considerate man who was too modest to obtrude his fine abilities." All this could well be included in our memory of Dr. Fourcade. Most of the rest, one feels, he would gladly leave where Milton so gloriously placed it:—

"Fame is no plant that grows on mortal soil,
Nor in the glistening foil
Set off to the world, nor in broad rumour lies,
But lives and spreads aloft in those pure eyes,
And perfect witness of all-judging Jove;
As he pronounces lastly on each deed,
Of so much fame in Heaven expect thy meed."

The end came in January 1948; he died on the 19th in the hospital at Humansdorp, where he is buried. Everything he had was bequeathed to the University of Cape Town. The "pennies" alluded to in one of his letters quoted here amount to an annual sum of several hundred pounds, sufficient to finance the publication of a goodly number of scientific papers each year. His precious herbarium, arranged in accordance with his List, in its beautifully made cabinets of rooi els wood (*Cunonia capensis*) is now an integral part of the Bolus Herbarium. It occupies a bay opposite the entrance door together with his dining table and chairs, also made of wood from the forest—stinkwood and yellowwood (*Ocotea* and *Podocarpus*). Some of his pictures, depicting scenery near Knysna, are on the walls, and the whole is something like a reincarnation of a part of the home that knew him at Witte Els Bosch.

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